Inventors:
Serial No.:

Filing Date:

Page 3

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

This listing of the claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

Claims 1-6 (canceled)

Claim 7 (original): An anti-prion antibody gene comprising an antibody heavy chain gene and an antibody light chain gene,

the antibody heavy chain gene being selected from the group consisting of

- (1a) a nucleic acid that contains a sequence selected from the group consisting of SEQ ID NOS: 1, 3, 5, 30, 32, and 34,
- (1b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (1a) above,
- (1c) a nucleic acid that has a variation in the sequence of the nucleic acid of (1a) or (1b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (1d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (1a) to (1c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for,

Inventors:

Serial No.: Filing Date:

Fujinaga et al.
Not yet assigned

Herewith

Page 4

the antibody light chain gene being selected from the group consisting of

(2a) a nucleic acid containing a sequence selected from the group consisting of SEQ ID NOS: 2, 4, 6, 31, 33, and 35,

(2b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (2a) above,

(2c) a nucleic acid that has a variation in the sequence of the nucleic acid of (2a) or (2b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

(2d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (2a) to (2c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

an antibody obtained by expression of the antibody heavy chain gene and the antibody light chain gene having abnormal prion growth inhibitory activity.

Claims 8-9 (canceled)

Claim 10 (original): An anti-prion chimera antibody comprising an antibody variable region that is coded for by

Attorney Docket No.: KUZ0035US.NP
Inventors: Fujinaga et a

Serial No.:

Filing Date:

Page 5

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

the anti-prion antibody gene according to Claim 7, and an antibody constant region of an animal other than a mouse.

Claim 11 (original): The anti-prion chimera antibody according to Claim 10, wherein it is coded for by

an antibody heavy chain gene selected from the group consisting of

- (1a) a nucleic acid that contains a sequence selected from the group consisting of SEQ ID NOS: 30, 32, and 34,
- (1b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (1a) above,
- (1c) a nucleic acid that has a variation in the sequence of the nucleic acid of (1a) or (1b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (1d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (1a) to (1c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

an antibody light chain gene selected from the group consisting of

(2a) a nucleic acid containing a sequence selected from the group consisting of SEQ ID NOS: 31, 33, and 35,

Attorney Docket No.: KUZ0035US.NP
Inventors: Fujinaga et

Serial No.: Filing Date:

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

Page 6

(2b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (2a) above,

- (2c) a nucleic acid that has a variation in the sequence of the nucleic acid of (2a) or (2b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (2d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (2a) to (2c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for.

Claims 12-30 (canceled)

Claim 31 (new): Cells having abnormal prion growth inhibitory activity, into which a gene that imparts abnormal prion growth inhibitory activity is introduced.

Claim 32 (new): The cells according to Claim 31, wherein the gene that imparts abnormal prion growth inhibitory activity is an anti-prion antibody gene.

Attorney Docket No.:

Inventors:
Serial No.:
Filing Date:

KUZ0035US.NP Fujinaga et al. Not yet assigned Herewith

Page 7

Claim 33 (new): The cells according to Claim 32, wherein the anti-prion antibody gene comprises an antibody heavy chain gene and an antibody light chain gene,

the antibody heavy chain gene being selected from the group consisting of

- (1a) a nucleic acid that contains a sequence selected from the group consisting of SEQ ID NOS: 1, 3, 5, 30, 32, and 34,
- (1b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (1a) above,
- (1c) a nucleic acid that has a variation in the sequence of the nucleic acid of (1a) or (1b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (1d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (1a) to (1c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for,

the antibody light chain gene being selected from the group consisting of

(2a) a nucleic acid containing a sequence selected from the group consisting of SEQ ID NOS: 2, 4, 6, 31, 33, and 35,

Inventors:
Serial No.:

Filing Date:

Page 8

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

(2b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (2a) above,

- (2c) a nucleic acid that has a variation in the sequence of the nucleic acid of (2a) or (2b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (2d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (2a) to (2c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

an antibody obtained by expression of the antibody heavy chain gene and the antibody light chain gene having abnormal prion growth inhibitory activity.

Claim 34 (new): The cells according to Claim 31, wherein the cells are mesenchymal cells.

Claim 35 (new): A method of treating a prion disease, the method comprising administering a therapeutically effective amount of a remedy selected from the group consisting of an agent containing mesenchymal cells as an effective component, a vector containing the anti-prion antibody gene of Claim 7, an anti-prion chimera antibody

Attorney Docket No.:

Inventors:

Serial No.: Filing Date:

Page 9

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

comprising an antibody variable region that is coded for by the anti-prion antibody gene according to Claim 7, and an antibody constant region of an animal other than a mouse, and a sustained-release preparation releasing an anti-prion antibody.

Claim 36 (new): The method according to Claim 35 wherein the mesenchymal cells have abnormal prion growth inhibitory activity.

Claim 37 (new): The method according to Claim 35, wherein the mesenchymal cells have introduced thereinto an anti-prion antibody gene having abnormal prion growth inhibitory activity.

Claim 38 (new): The method according to Claim 37, wherein the anti-prion antibody gene comprises an antibody heavy chain gene and an antibody light chain gene,

the antibody heavy chain gene being selected from the group consisting of

(1a) a nucleic acid that contains a sequence selected from the group consisting of SEQ ID NOS: 1, 3, 5, 30, 32, and 34,

(1b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (1a) above,

Attorney Docket No.: Inventors:

Serial No.: Filing Date:

KUZ0035US.NP Fujinaga et al. Not yet assigned Herewith

Page 10

(1c) a nucleic acid that has a variation in the sequence of the nucleic acid of (1a) or (1b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

(1d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (1a) to (1c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for,

the antibody light chain gene being selected from the group consisting of

- (2a) a nucleic acid containing a sequence selected from the group consisting of SEQ ID NOS: 2, 4, 6, 31, 33, and 35,
- (2b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (2a) above,
- (2c) a nucleic acid that has a variation in the sequence of the nucleic acid of (2a) or (2b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (2d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (2a) to (2c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

Inventors:
Serial No.:

Filing Date:

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

Page 11

an antibody obtained by expression of the antibody heavy chain gene and the antibody light chain gene having abnormal prion growth inhibitory activity.

Claim 39 (new): The method according to Claim 35, wherein the agent is for intravenous administration.

Claim 40 (new): The method according to Claim 35, wherein the mesenchymal cells are selected from the group consisting of bone-marrow cells, umbilical cord blood cells, and peripheral blood cells.

Claim 41 (new): The method according to Claim 35, wherein the vector is an adenovirus vector containing an RGD sequence.

Claim 42 (new): The method according to Claim 35, wherein the anti-prion chimera antibody is coded for by

an antibody heavy chain gene selected from the group consisting of

- (1a) a nucleic acid that contains a sequence selected from the group consisting of SEQ ID NOS: 30, 32, and 34,
- (1b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (1a) above,

Inventors:
Serial No.:

Filing Date:

Page 12

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

(1c) a nucleic acid that has a variation in the sequence of the nucleic acid of (1a) or (1b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

(1d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (1a) to (1c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

an antibody light chain gene selected from the group consisting of

- (2a) a nucleic acid containing a sequence selected from the group consisting of SEQ ID NOS: 31, 33, and 35,
- (2b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (2a) above,
- (2c) a nucleic acid that has a variation in the sequence of the nucleic acid of (2a) or (2b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (2d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (2a) to (2c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for.

Attorney Docket No.:

Inventors:

Serial No.:

Filing Date:

Page 13

KUZ0035US.NP Fujinaga et al.

Not yet assigned

Herewith

Claim 43 (new): The method according to Claim 35, wherein the anti-prion antibody is an antibody that is coded for by the anti-prion antibody gene comprising an antibody heavy chain gene and an antibody light chain gene,

the antibody heavy chain gene being selected from the group consisting of

- (1a) a nucleic acid that contains a sequence selected from the group consisting of SEQ ID NOS: 1, 3, 5, 30, 32, and 34, (1b) a nucleic acid that, by genetic code degeneration,
- codes for the same polypeptide as does the nucleic acid of (1a) above,
- (1c) a nucleic acid that has a variation in the sequence of the nucleic acid of (1a) or (1b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (1d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (1a) to (1c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for,

the antibody light chain gene being selected from the group consisting of

(2a) a nucleic acid containing a sequence selected from the group consisting of SEQ ID NOS: 2, 4, 6, 31, 33, and 35,

Inventors:
Serial No.:

Filing Date: Page 14

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

(2b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (2a) above,

- (2c) a nucleic acid that has a variation in the sequence of the nucleic acid of (2a) or (2b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (2d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (2a) to (2c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

an antibody obtained by expression of the antibody heavy chain gene and the antibody light chain gene having abnormal prion growth inhibitory activity; or

the anti-prion chimera antibody.

Claim 44 (new): The method according to Claim 35, wherein the anti-prion antibody is an antibody that is coded for by the anti-prion antibody gene comprising an antibody heavy chain gene and an antibody light chain gene,

the antibody heavy chain gene being selected from the group consisting of

(1a) a nucleic acid that contains a sequence selected from the group consisting of SEQ ID NOS: 1, 3, 5, 30, 32, and 34,

Inventors:
Serial No.:

Filing Date:

Page 15

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

(1b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (1a) above,

- (1c) a nucleic acid that has a variation in the sequence of the nucleic acid of (1a) or (1b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (1d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid of any one of (1a) to (1c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for,

the antibody light chain gene being selected from the group consisting of

- (2a) a nucleic acid containing a sequence selected from the group consisting of SEQ ID NOS: 2, 4, 6, 31, 33, and 35,
- (2b) a nucleic acid that, by genetic code degeneration, codes for the same polypeptide as does the nucleic acid of (2a) above,
- (2c) a nucleic acid that has a variation in the sequence of the nucleic acid of (2a) or (2b) above but that still codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and
- (2d) a nucleic acid that hybridizes under stringent conditions with a complementary strand of the nucleic acid

Attorney Docket No.: KUZ0035US.NP
Inventors: Fujinaga et

Serial No.: Filing Date:

KUZ0035US.NP Fujinaga et al. Not yet assigned

Herewith

Page 16

of any one of (2a) to (2c) above or a fragment thereof, and that codes for a polypeptide that has the same function as the polypeptide that said nucleic acid codes for, and

an antibody obtained by expression of the antibody heavy chain gene and the antibody light chain gene having abnormal prion growth inhibitory activity; and

the anti-prion chimera antibody.

Claim 45 (new): The method according to Claim 35, wherein the preparation is in osmotic pump form.

Claim 46 (new): The method according to Claim 35, wherein the preparation comprises anti-prion antibody-secreting cells.

Claim 47 (new): The method according to Claim 46, wherein the anti-prion antibody-secreting cells comprise cells having abnormal prion growth inhibitory activity, into which a gene that imparts abnormal prion growth inhibitory activity is introduced.

Claim 48 (new): A method for delivering a substance to a lesion site of a prion disease using mesenchymal cells.